

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-25. (Canceled)

26. (Currently Amended) A high pressure fuel supply pump, comprising an electromagnetic mechanism having a plunger biased to a jump-out position by a spring, an electromagnetic solenoid for operating said plunger to a withdrawn position, ~~and~~ an intake check valve provided in a fuel inlet of a pressurizing chamber of a pump, said electromagnetic mechanism being unenergized and mounted integral with the pump body so that, when said plunger is at the jump-out position, said electromagnetic mechanism comes in contact with said check valve to ~~operate~~ move said check valve to an opening position; and, when said electromagnetic mechanism is energized and said plunger is at the withdrawn position, said electromagnetic mechanism moves away from said check valve to operate said check valve to a closed position, a guide member having a first stopper surface, a fixed stopper with a second stopper surface and a movable stopper being operatively associated with said electromagnetic mechanism so as to be movable between said first and second stopper surfaces by a stroke Ss wherein with said electromagnetic device being unenergized a ball member associated with said member stopper protrudes from the guide member by an amount Sg less than the length of the stroke Ss and the movable stopper and

said movable is in contact with said first stopper surface, and with energization of said electromagnetic drive device, said ball member is moved within said guide member less than said amount S_g so as to close said intake check valves whereby fuel in said pressurizing chamber is dammed up by said valve body when the a force of said a second spring does not act on said valve body and is discharged downstream of an opened discharge valve provided at said pressurizing chamber.

27. (Canceled)

28. (Currently Amended) A high pressure fuel supply pump having a pressurizing chamber communicated with an intake passage of fuel and a discharge passage associated with a discharge valve, a piston for feeding fuel under pressure in said pressurizing chamber to said discharge passage, and an intake check valve provided within said intake passage, a guide member having a first stopper surface, a fixed stopper with a second stopper surface and a movable stopper being operatively associated with said electromagnetic mechanism so as to be movable between said first and second stopper surfaces by a stroke S_s wherein with said electromagnetic device being unenergized a ball member associated with said member stopper protrudes from the guide member by an amount S_g less than the length of the stroke S_s and the movable stopper and said movable is in contact with said first stopper surface, and when pressure at downstream of said intake valve is equal to or higher than pressure upstream thereof, a valve closing force is generated in said intake check valve, said supply

pump comprising an engaging member applied with a first biasing force so as to oppose when said intake valve moves in a closing direction, and an actuator for exerting a second biasing force opposite to said first biasing force to the engaging member by an external input, in which when said first biasing force is set off by said second biasing force, said engaging member is pulled away from said intake check valve, wherein said ball member is moved within said guide member less than said amount S_g so as to close said intake check valves whereby with said first biasing force counterbalanced by said second biasing force, the fuel in said pressurizing chamber dammed up by a body of said intake check valve is discharged downstream of said discharge valve.

29. (Currently Amended) The high pressure fuel supply pump according to claim 28, wherein resultant force of the closing force of the intake check valve generated when pressures at upstream and downstream of said intake check valve are equal to each other and the second biasing force by said actuator is made higher than said first biasing force.

30. (Original) The high pressure fuel supply pump according to claim 28, wherein said actuator generates the second biasing force by electromagnetic force.

31. (Currently Amended) The high pressure fuel supply pump according to claim 28, wherein an engaging portion between said intake check valve and said engaging member is in the form of a concave-convex engagement.

32.- 34. (Canceled)

35. (Currently Amended) A high pressure fuel supply pump for an internal combustion engine, comprising:

an electromagnetic ~~driving mechanism~~ device provided with a holder in which an intake check valve mechanism is accommodated in an intake passage portion communicated with a pressurizing chamber which is provided in a pump body with a piston movable along an operational axis line and having a plunger rod which moves forward and backward along the same axis as said intake check valve and a movable core mounted thereon, and

a guide member having a first stopper surface, a fixed stopper with a second stopper surface and a movable stopper being operatively associated with said electromagnetic mechanism so as to be movable between said first and second stopper surfaces by a stroke Ss,

wherein said ~~driving mechanism~~ electromagnetic device is provided at a side of said pump body such that the operational axis line of said piston intersects said same axis along which said plunger rod moves, said holder is fixed between said electromagnetic driving mechanism and said pump body by fixing said electromagnetic driving mechanism to said pump body, and said electromagnetic driving mechanism forms an intake opening opened and closed by said intake check valve at a part in contact with said holder, wherein with said electromagnetic device being unenergized a ball member associated with said member stopper protrudes from the guide member by an amount Sg less than the length of the stroke Ss and the movable stopper and said movable is in

contact with said first stopper surface, and said ball member is moved within said guide member less than said amount S_g so as to close said intake check valves whereby.

36. (Previously Presented) A high pressure fuel supply pump for supplying fuel to an internal combustion engine, comprising:

a pressurizing chamber;

a reciprocating plunger arranged to change the volume within the pressurizing chamber for pressurizing fuel in said pressurizing chamber;

a valve body provided in order to open and close a through hole for connecting the interior of the pressurizing chamber with a low pressure fuel passage, said valve body being arranged on the downstream side of said through hole;

a first spring for biasing the valve body in a closing direction;

an engaging member installed on the side of said low pressure fuel passage to operate said valve body to an opening position against force of said first spring;

a second spring for imparting said engaging member resisting force to the force of said first spring; and

an electromagnetic driving device for changing a state of said engaging member from engagement with said valve body against the force of said second spring, wherein

the high pressure fuel supply pump is structured such that fuel to be supplied to a combustion chamber of said internal combustion engine is guided from a fuel supply port of the high pressure fuel supply pump through the through hole into the pressurizing chamber and there from to a discharge passage of the high pressure fuel supply pump provided with a discharge valve.

37. (Previously Presented) High pressure fuel supply pump according to claim 36, wherein said through hole is a fuel intake hole.

38. (Currently Amended) High pressure fuel supply pump according to claim 36, wherein said through hole is a fuel spill ~~(overflow)~~ hole.

39. (Canceled)

40. (Previously Presented) High pressure fuel supply pump according to claim 36, wherein said valve body is formed of a material having a Rockwell hardness of more than HRC 30 scale.

41. (Previously Presented) High pressure fuel supply pump according to claim 36, wherein said valve body is formed of stainless steel SUS440C in accordance with JIS standard.

42. (Previously Presented) High pressure fuel supply pump according to claim 36, wherein a member formed with said through hole is formed of stainless steel SUS 440C in accordance with JIS standard.

43. (Previously Presented) A high pressure fuel supply pump for supplying fuel to an internal combustion engine, comprising:

an electromagnetic operating mechanism controlled by a signal from a control unit of the internal combustion engine;

an engaging member provided in said electromagnetic operating mechanism to take an advanced first position and a withdrawn second position by a control signal from said control unit;

a valve body for opening and closing a fuel introducing port for communicating a pressurizing chamber of a pump with a low pressure side fuel passage; and

a spring for biasing said valve body in a direction in which said fuel introducing port closes;

said high pressure fuel supply pump for an internal combustion engine configured as that when said engaging member is at the first position, said valve body is held at the position at which said fuel introducing port is opened;

and when said engaging member is at the second position, said valve body is opened and closed due to a pressure difference between upstream and downstream of said valve body,

wherein said engaging member is at the second position, when the electromagnetic operating mechanism is on,

wherein the closed state of the valve body is maintained, even if the electromagnetic operating mechanism is deenergized, after energizing the electromagnetic operating mechanism and closing the valve body, until the next start of the intake stroke.

44. (Previously Presented) High pressure fuel supply pump according to claim 43,

wherein when fuel pressure in said pressurizing chamber exceeds a predetermined value after said valve body has been closed, said valve body prevents said engaging member from changing to the first position.

45. (Previously Presented) High pressure fuel supply pump according to claim 43, comprising:

a valve operating member for pushing or pulling said valve body in a direction along the axis of a component of said spring to change said valve body to an opening position or a closed position; and

an electromagnetic mechanism for operating said valve operating member and said valve body to a separated state and/or an engaged state so as to operate said valve body to the opening position or the closed position through said valve operating member.

46. (Previously Presented) High pressure fuel supply pump according to claim 43, comprising:

an intake check valve provided in a fuel inlet portion of a pressurizing chamber;

an operating member which comes in contact with said intake check valve to forcibly operate it to the opening position; and

an electromagnetic mechanism for pulling said operating member away from said intake check valve to move said intake check valve to a non-contact position.

47. (Previously Presented) High pressure fuel supply pump according to claim 43, comprising:

an electromagnetic mechanism having a plunger biased to a jump-out position by a spring, and an electromagnetic solenoid for operating said plunger to a withdrawn position, and

an intake check valve provided in a fuel inlet of a pump, said electromagnetic mechanism being mounted integral with the pump body so that when said plunger is at the jump-out position, it comes in contact with said check valve to operate said check valve to an opening position, and when at the withdrawn position, it moves away from said check valve to operate said check valve to a closed position.

48. (Previously Presented) High pressure fuel supply pump according to claim 43, comprising:

a valve body loaded with spring so that a fuel introducing port of a pressurizing chamber is closed from the compression chamber side of the pressurizing chamber; and

an opening and closing operating mechanism which is moved away from the valve body in the stroke in which said valve body closes said fuel introducing port, and said high pressure fuel supply pump comes in contact with the valve

body in the stroke in which said valve body is opened imparting force opposite to said spring force thereto.

49. (Previously Presented) High pressure fuel supply pump according to claim 43, comprising

a pressurizing chamber communicated with an intake passage of fuel and a discharge passage;

a piston for feeding fuel under pressure in said pressurizing chamber to said discharge passage; and

an intake valve provided within said intake passage,

wherein when pressure at downstream of said intake valve is equal to or higher than pressure upstream thereof, a valve closing force is generated in said intake valve, said supply pump comprising an engaging member applied with a first biasing force so as to oppose when said intake valve moves in a closing direction, and an actuator for exerting a second biasing force opposite to said first biasing force to the engaging member by an external input, in which when said first biasing force is set off by said second biasing force, said engaging member is pulled away from said intake valve.

50. (Previously Presented) High pressure fuel supply pump according to claim 49, wherein resultant force of the closing force of the intake valve generated when pressures at upstream and downstream of said intake valve are equal to each other and the second biasing force by said actuator is made higher than said first biasing force.

51. (Previously Presented) High pressure fuel supply pump according to claim 49, wherein said actuator generates the second biasing force by electromagnetic force.

52. (Previously Presented) High pressure fuel supply pump according to Claim 36, further comprising a cylinder within which the plunger is arranged to reciprocate.

53. (Previously Presented) High pressure fuel supply pump according to claim 52, wherein operating timing of said electromagnetic driving device is selected as fixed timing during compression operation of said plunger within said cylinder.